

AUG 29 2008



1085863 - R8 SDMS

**Draft Health and Safety Plan for
Sampling and Analysis of Libby
Asbestos Superfund Site Operable
Unit 3 (OU3) Revision No. 1**

Remedium Group Inc.

August 2008

Parametrix

Draft Health and Safety Plan for Sampling and Analysis of Libby Asbestos Superfund Site Operable Unit 3 (OU3) Revision No. 1

Prepared for

Remedium Group Inc.
6401 Poplar Avenue, Suite 301
Memphis, TN 38119

Prepared by

Parametrix
33972 Texas Street SW
Albany, OR 97321-9487
T. 541.791.1667 F. 541.791.1699
www.parametrix.com

CITATION

Parametrix. 2008. Draft Health and Safety Plan for
Sampling and Analysis of Libby Asbestos Superfund
Site Operable Unit 3 (OU3) Revision No. 1.
Prepared by Parametrix, Albany, Oregon.
August 28, 2008.

TABLE OF CONTENTS

1. INTRODUCTION	1-1
1.1 LOCATION OF SITE	1-1
1.2 SCOPE OF THE HASP	1-1
1.3 APPLICABILITY AND REGULATORY GUIDANCE	1-1
2. KEY PARAMETRIX PERSONNEL	2-1
2.1 HEALTH AND SAFETY PERSONNEL	2-1
2.2 PROJECT PERSONNEL	2-1
2.3 CLIENT CONTACT	2-1
3. HEALTH AND SAFETY TRAINING FOR SITE INVESTIGATIONS	3-1
4. HAZARD ANALYSIS	4-1
4.1 PATHWAYS FOR HAZARDOUS SUBSTANCES DISPERSION	4-1
4.2 PERSONAL PROTECTIVE EQUIPMENT	4-1
4.3 CHEMICAL HAZARDS	4-2
4.4 PHYSICAL HAZARDS	4-2
4.5 BIOLOGICAL HAZARDS	4-3
4.6 SAMPLE SPECIFIC POTENTIAL HAZARDS	4-4
4.6.1 Collection of Small Mammals	4-4
4.6.2 Collection of Birds	4-7
4.6.3 Collection of Fish and Aquatic Invertebrates	4-8
4.6.4 Collection of Sediment	4-8
5. INSPECTION AND DECONTAMINATION PROCEDURES	5-1
5.1 INSPECTION OF RESPIRATORS	5-1
5.2 DECONTAMINATION PROCEDURES	5-1
6. EMERGENCY ACTION PLAN	6-1
6.1 EMERGENCY ROUTES	6-1
6.2 RESCUE AND MEDICAL DUTIES	6-1
6.3 REPORTING EMERGENCIES	6-1
6.4 REPORTING ACCIDENTS	6-1
7. MISCELLANEOUS REQUIREMENTS	7-1
8. REFERENCES	8-1

TABLE OF CONTENTS (CONTINUED)

LIST OF FIGURES

4-1	Heat Exposure vs. Heat Stroke	4-5
6-1	Map to Hospital	6-3

LIST OF TABLES

6-1	List of Emergency Contacts.....	6-5
-----	---------------------------------	-----

APPENDICES

- A Forms
 - Signed Acknowledgement Form
 - Employee's Report of an Accident
 - Supervisor's Report of an Accident

ACRONYMS AND ABBREVIATIONS

CPR	Cardiopulmonary resuscitation
H&S Officer	Health and Safety Officer
HASP	Health and Safety Plan
HEPA	high-efficiency particulate air
HPS	Hantavirus Pulmonary Syndrome
OU3	Operable Units
PAPRs	Powered Air Purifying Respirators
PPE	Personal protective equipment
Remedium	Remedium Group, Inc.
SAP	Sampling and Analysis Plan

1. INTRODUCTION

The Libby Asbestos Superfund Site Operable Unit 3 (site) is located approximately 7 miles northeast of the town of Libby, in Lincoln County in northwest Montana. The site comprises the vermiculite mine on Zonolite Mountain, the former screening plant and former export plant (two former vermiculite processing centers), Rainy Creek Road, the surrounding forested area, and homes and businesses which could have become contaminated with Libby asbestos fibers as a result of the mining and processing operations in and around Libby. Investigative activities are being conducted at the site. Only Operable Unit 3 (OU3) sampling activities covered in the Sampling and Analysis Plan (SAP) (EPA 2008) are covered by the procedures addressed in this Health and Safety Plan (HASP). Accordingly, this HASP addresses the health and safety concerns and precautions for Parametrix employees collecting biotic (i.e., fish, aquatic invertebrates, birds, and small mammals) and abiotic (i.e., sediment) samples in OU3. Sampling is anticipated to begin in September 2008.

1.1 LOCATION OF SITE

Site: Libby Asbestos Superfund Site Operable Unit 3
Location: 7 miles northeast of Libby
County: Lincoln County, Montana

Figure 2-1 of the SAP (EPA 2008) provides information on the vicinity of the site relative to Libby.

1.2 SCOPE OF THE HASP

Activities covered by this HASP include the collection of both biotic and abiotic samples. Fish and aquatic invertebrates will be collected for counts and identification, while birds and mammals will be collected for tissue necropsy and initial population analysis. In the future, fish may also be collected for tissue necropsy. Tissue necropsy will be performed to evaluate any gross abnormalities and to collect tissue samples for subsequent histopathological evaluation (the histopathological evaluation is outside the scope of this HASP). Sediment will be collected for use in aquatic bioassays.

This HASP covers only those health and safety concerns associated with the collection of biotic and abiotic samples from Libby Asbestos Superfund Site OU3, as well as those associated with performing the necropsies on birds, fish, and mammals, by employees of Parametrix, Inc. It does not address any other activities conducted by Parametrix or other subcontractors.

1.3 APPLICABILITY AND REGULATORY GUIDANCE

This HASP applies only to authorized employees of Parametrix involved directly in the environmental sampling activities at the Libby Asbestos Superfund Site, as well as those associated with performing the necropsies on birds, fish, and mammals. The primary site-specific activities to be performed by Parametrix field sampling staff are to collect biotic and abiotic samples. This HASP is designed to protect Parametrix field staff engaged in these field activities by complying with the following regulations and guidelines:

- Federal regulations (*OSHA, 29 CFR Part 1910.120[b][1][iv] and [v]*) require that the employer provide relevant health and safety information including, but not

limited to, this HASP to contractors, subcontractors, or their representatives, as well as OSHA and U.S. EPA.

Any party other than Parametrix remains responsible for providing its own site-specific HASP that addresses its own site-specific activities, which may differ from those addressed in this HASP for Parametrix field staff. Hence, Parametrix, Inc. assumes no responsibility or liability for the use or misuse of its HASP by such other party, its employees, agents, or subcontractors. Such other party must develop and implement its own HASP, and further ensure that the provisions and implementation of its HASP will smoothly interface with other plans in effect at the site.

2. KEY PARAMETRIX PERSONNEL

2.1 HEALTH AND SAFETY PERSONNEL

Corporate Health and Safety Officer:	Sheila McConnell or Mike Warfel	Phone: (425) 452-8655 Phone: (253) 863-5128
Site Safety Officer	Joe Volosin	Phone: (716) 667-1425

2.2 PROJECT PERSONNEL

Senior Project Manager:	William (Bill) Stubblefield	Phone: (541) 791-1667
Project Manager	Suzanne (Sue) Robinson	Phone: (425) 458-6205
Field Study Director:	Suzanne (Sue) Robinson	Phone: (425) 458-6205
Field Team Leader:	Joe Volosin	Phone: (716) 667-1425
Field Team Support:	Jeffrey Wirtz	Phone: (541) 791-1667
Parametrix Site Safety Officer	Joe Volosin	Phone: (716) 667-1425
Project Chemist	Stuart Currie	Phone: (425) 458-6273

2.3 CLIENT CONTACT

Remedium Group, Inc.	Robert Marriam	Phone: (901) 820-2023
----------------------	----------------	-----------------------

3. HEALTH AND SAFETY TRAINING FOR SITE INVESTIGATIONS

All Parametrix sampling personnel have received health and safety training commensurate with the activities to be performed:

- The Parametrix sampling team will have a minimum of 40 hours of initial training and, as needed, eight hours of annual refresher training (training curriculum used to meet the training requirements of 29 CFR 1910.120(e)); or acceptable equivalent. They will also be familiar with asbestos hazards and controls and shall have had asbestos awareness training either as part of the 40 Hour, a Refresher, or as stand alone training.
- On-site¹ management and supervisors (directly responsible for or who supervise employees) have completed at least eight (8) hours of additional specialized training.
- Field team members will have current medical clearance to undertake hazardous waste activities and to wear respiratory protection per 29 CFR 1910.120(f).
- At least one field team member is currently certified in first aid and cardiopulmonary resuscitation (CPR) through the American Red Cross or an equivalent program.
- If boats or small watercraft are required during the course of collecting samples, training in boating and water safety will be required for boat operators.
- In addition, all field team members will be required to read and understand this HASP and attend a field team meeting prior to embarking on the field work. This meeting will be conducted by the Parametrix Site Safety Officer.

¹ On-site activities are all activities conducted within the Libby Asbestos Superfund Site OU3.

4. HAZARD ANALYSIS

This hazard analysis includes the tasks to be performed, the potential hazards, and the protective measures to be taken. The items listed in this HASP include only those to be encountered while collecting abiotic and biotic samples at Libby Asbestos Superfund Site OU3. Parametrix personnel will also receive any on-site health and safety orientation that may be required by the Remedium Group, Inc. (Remedium).

The information in this hazard analysis has been compiled based on the expected hazards of the work to be performed, and in consideration of the SAP (EPA 2008) for the project. Changes to procedures or encounters of unexpected hazards will require reconsideration of this HASP. Such changes require the approval of the Parametrix Health and Safety Manager and the Parametrix Project Manager.

Personal protective equipment (PPE), such as gloves, safety glasses, protective clothing, and respirators are used to shield or isolate individuals from the chemical, physical, and biological hazards that may be encountered during the collection of biological samples. The use of adequate PPE will protect the respiratory system, the skin, eyes, and hands.

The types of PPE that may be required will vary depending on the degree and type of contamination of the material, as well as the methods to remove, transport, and dispose of the material. PPE will be selected and used to meet the requirements of 29 CFR Part 1910, Subpart I.

4.1 PATHWAYS FOR HAZARDOUS SUBSTANCES DISPERSION

Hazardous substances (especially asbestos in soils, water, and mine tailings) found at Libby Asbestos Superfund Site OU3 may be dispersed to humans by various pathways, including:

- Potential splash from surface water during sample collection or sample processing.
- Potential skin contact with contaminated water, soil, or sediment during sample collection.
- Potential lacerations from cutting instruments used during sample collection or necropsy.
- Potential bites from insects, snakes, small mammals, or birds during sample collection.
- Potential electric shock during fish sample collection.
- Where respirators may not be required, dust masks may be used at the discretion of the field sampling personnel.

4.2 PERSONAL PROTECTIVE EQUIPMENT

At a minimum, PPE necessary includes the following:

- Protective clothing (i.e., Level C PPE, including hooded Tyvek® coveralls [two layers] and full-face Powered Air Purifying Respirators [PAPRs] with high-efficiency particulate air [HEPA] P100 filter cartridges). The hood shall be worn at all times when in the field or potentially exposed to asbestos fibers.

- Rubber gloves and neoprene chest waders (or neoprene hip waders), required for fish collection (electroshock risk) are recommended when collecting aquatic invertebrates and sediment.
- Chemical-protective nitrile gloves (inner and outer pair).
- Heavy-duty (Kevlar®-reinforced) gloves when handling live mammals.
- Goggles or safety glasses will be worn if there is any possibility of splashing liquids into the eyes or to prevent flying particles or other foreign materials from getting into the eyes.
- Chemical-protective boot covers or boots that also provide adequate footing while hiking along the water bodies chosen for sampling. In some instances, it may be more critical that the boots flex well and have soles to prevent slipping in the woods than be chemical-protective.
- U.S. Coast Guard-approved life jackets, personal floatation devices, or life rings, if boats are used in sample collection.
- Protective gloves and respirator while performing necropsies of fish, mammals or birds off-site.

4.3 CHEMICAL HAZARDS

The primary constituent of concern associated with the sampling to be performed at Libby Asbestos Superfund Site OU3 is asbestos (i.e., airborne tremolite [Libby amphibole]).

Reportedly, the air samples collected previously have not identified fibers approaching allowable limits when analyzed by TEM (transmission electron microscopy).

4.4 PHYSICAL HAZARDS

Potential physical hazards encountered at the site may include the following:

- Slipping, tripping, or falling. (See note above regarding footwear.)
- Exposure to vehicle traffic on-site.
- Back injuries. Injuries may occur from lifting heavy objects such as sample containers.
- Cuts or abrasions. These may occur from use of sampling equipment or cutting instruments.
- Heat stress and dehydration. Field sampling personnel should drink sufficient water throughout the day and should monitor themselves for heat stress as described in Figure 4-1 of this HASP. Symptoms of heat stress include irritation, dizziness, nausea or vomiting, rapid pulse, muscle cramps, and weakness. Heat stress can be avoided by wearing loose-fitting, light-colored clothing, and a hat or cap, as well as staying hydrated.
- Sunburn. Field sampling personnel should wear hats and sunscreen to prevent sunburn when working outdoors.
- Inclement weather. Field sample personnel should wear proper attire, including a hat and gloves, to prevent hypothermia.

- Electric shock. While electroshocking for fish, rubber gloves and neoprene chest waders (or neoprene hip waders) will be worn.
- Airborne contaminants. Particulates may be transported through the air and be deposited downwind of the source. PAPRs will be worn when collecting samples in both mine and off-mine locations to prevent inhalation of airborne tremolite (Libby amphibole) asbestos fibers.
- Inhalation and skin issues related to formalin. A formalin solution will be used to preserve tissue samples for histopathological evaluation. To prevent inhalation of formalin, a fume hood will be used off-site where the necropsies are being performed on fish, birds, and mammals. Formalin is a potent skin sensitizer and skin irritant, so personnel potentially handling formalin or specimens preserved in formalin shall wear nitrile or other gloves designed to withstand formalin and/or formaldehyde.
- Biological hazards (more detail in Section 4.5). Heavy-duty gloves (Kevlar®-reinforced) will be worn on-site while collecting mammals or birds to prevent bites by infected animals. Appropriate respirators (i.e., PAPR with N-100 cartridges or equivalent half-face respirators) will be worn off-site when performing necropsies of mammals or birds to prevent inhalation of the hantavirus or avian influenza. Gloves will also be worn when performing necropsies to prevent skin absorption of the hantavirus and formalin.

4.5 BIOLOGICAL HAZARDS

Potential biological hazards encountered at the site may include the following:

- **Venomous Snakes.** Montana has only one species of venomous snake, the prairie rattlesnake (*Crotalus viridis*). Personnel shall avoid putting hands into spaces that are not completely visible and shall watch where they are walking.
- **Mosquitoes.** Field team members are required to take a sufficient supply of suitable mosquito repellent to use in minimizing mosquito bites. *Anopheles* species are widely distributed in the United States. This mosquito can transmit malaria. *Culex* species, the chief vector of West Nile Virus, are also widely distributed in the United States (including Montana).
- **Biting flies.** Biting flies generally pose no serious health threats, but may draw blood.
- **Pests.** Ticks, fleas, and other pests are known to inhabit different areas. Field sampling personnel should take precautions to minimize infestations, as pests can harbor diseases such as Lyme disease and Colorado Tick Fever virus. Although the potential risk to humans is small, wild rodent plague exists in this area. The causative agent of the plague is a bacterium, *Yersinia pestis*. Humans may be infected by the bite of rodent fleas.
- **Parasites.** *Giardia lamblia* is a parasite found in every region of the United States. Symptoms include diarrhea, loose or watery stool, stomach cramps, and upset stomach. These symptoms may lead to weight loss and dehydration. The potential risk to field samplers at the project site is small. Field sampling personnel should avoid ingestion of water from rivers and creeks.
- **Birds.** Birds are potential carriers of avian influenza. Although the risk to field personnel is minimal since the virus does not transmit easily to humans, common sense precautions will be used when processing or handling birds. Sampling

personnel will wear protective gloves, eye protection, and an approved respirator when handling birds, if not in Level C PPE (e.g., while performing necropsies off-site).

- **Small Mammals.** These organisms are potential carriers of hantavirus; exposure may occur through contact with the animals, their droppings or nesting materials. Sampling personnel will wear protective gloves, eye protection and an approved respirator when handling small mammals, if not in Level C PPE (e.g., while performing necropsies off-site). All mammals potentially carrying hantavirus should be thoroughly wetted with a chlorine and water solution and allowed to remain wet for at least 15 minutes prior to being handled.
- **Large Mammals.** Attacks on field personnel by bears, wolves, and mountain lions could occur. At least one member of the field crew will carry bear mace and be instructed on how to use it. A walking stick may be used to fight off an aggressive animal. No one will work alone and all field personnel shall make noise to scare animals, if necessary.
- **Poisonous Plants.** Poisonous plants (e.g., poison oak and poison ivy) may cause dermal (skin) rashes in susceptible individuals. Precautions, including the use of barrier creams, should be taken to protect the skin from contact with plant oils. In addition, personnel should wash exposed skin areas as soon as possible after contact.

4.6 SAMPLE SPECIFIC POTENTIAL HAZARDS

4.6.1 Collection of Small Mammals

Small mammals will be collected using appropriate methods specified in the SAP (EPA 2008). Small rodents such as mice may be infected with a type of hantavirus that causes Hantavirus Pulmonary Syndrome (HPS) and that may be transmitted to humans. Rodents shed the virus in their urine, droppings, and saliva. Humans are at risk of contracting HPS if they inhale saliva or excreta, as dried particles, from infected animals. The virus may be transmitted directly into broken skin, through the eyes, or, possibly, via the ingestion of contaminated food or water. The virus also may be directly transmitted through the bite of an infected animal. Precautions will be taken when removing dead rodents from traps, handling rodent excreta, rodent nests, and traps. Personnel performing rodent trapping and specimen collection will be made aware of the risks associated with these tasks and precautions to minimize these risks.

Other potential hazards include bruising or injury from bites from live animals. Protective clothing, gloves, and respirators will be worn at all times during the collection, handling, and processing of small mammals, if not in Level C PPE (e.g., while performing necropsies off-site). Traps, bags, and other collection vessels will be disinfected.

HEAT EXPOSURE

Workers engaged in strenuous activity are susceptible to illness due to heat exposure, especially in hot geographic areas and, in any area, at warmer times of the year. Illnesses due to heat are frequently seen in industries using furnaces or heat processes.

Illness due to overexposure to heat, especially at a time of physical stress, occurs most often during the early part of a hot spell or in people who overexert themselves without adequate conditioning.

When one exercises, heat is created in the body. The body automatically reacts to get rid of this heat through the sweating mechanism. When a person perspires, salt and water go from the sweat glands up to the skin surface; the water evaporates from the skin surface and cools the body.

The three separate illnesses caused by heat exposure are:

- Heat cramps
- Heat exhaustion
- Heat stroke (sunstroke)

Heat Cramps

Painful muscle spasms of the arms and legs (heat cramps) following strenuous exercise are occasionally seen in people who otherwise seem to be in good physical condition. Very hot weather or prolonged exposure to the sun is not always necessary for heat cramps to occur. Industrial workers experience them more often than athletes.

TREATMENT—Generally speaking, people with heat cramps need more salt. Heat cramps will usually stop when the patient is given a solution of salt and water made by mixing one teaspoon of table salt to a quart of water or other appropriate replacement fluid, such as Gatorade. If there is any indication of anything more serious, transport the patient immediately to a medical facility. Do not attempt further diagnosis.

Heat Exhaustion

Heat exhaustion (heat prostration or heat collapse) is the most common of the illnesses caused by heat. Weakness, dizziness, headache, nausea, loss of appetite, and faintness may all be a part of heat exhaustion. The patient will appear ashen gray, his skin will be cold and clammy, and the pupils of his eyes may be dilated. It may be difficult to diagnose heat exhaustion. The vital signs may be normal; body temperature may even be normal.

TREATMENT—Care for the patient as if he or she were in shock and transport him to a medical facility. He should rest in a cool or air-conditioned area. Salt and water may aid in recovery, but the condition is not primarily caused by lack of salt or water.

Heat Stroke (Sunstroke)

Sunstroke (more accurately heat stroke, since it is not necessary to be exposed to the sun) is a less common, but far more

serious illness. People who experience heat stroke are frequently those in a very warm and humid environment. The most important signs in the patient are an exceedingly high temperature and a very hot, dry skin; even the armpits will be dry.

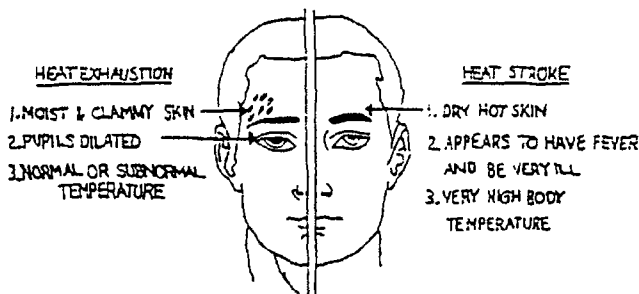
Compare these symptoms with those of heat exhaustion (see sketch). The patient has a breakdown in his sweating mechanism and is unable to lose excessive body heat built up while he was exercising. As heat builds up in the patient's body, his temperature rises. If body temperature rises too high, delicate brain cells may be injured.

TREATMENT—Heat stroke is a true emergency. The victim may die if proper treatment is not provided. Emergency Care for heat stroke is designed to rid the body of extra heat. Try to cool the body immediately. Wet, cold towels applied to the whole body and air from a fan will help while the patient is being transported to the hospital. In the hospital, an ice-water bath or other treatment will probably be used. Remember that the patient with heat stroke may die unless you actively work at lowering his body temperature.

Prevention

It is possible to minimize the adverse effects of hot environments by allowing workers time to acclimatize to them—a process of physiological adaptation, characterized by an increased sweat output and a lowering of the pulse rate and deep body temperature in response to the thermal stress.

Acclimatization (or adequate conditioning) to a particular environment develops quickly, being almost completed in 10 days. But, it is also lost quickly—two to three days without heat exposure leading to a marked loss of tolerance. Any layoff due to holidays or illness should, therefore, be followed by a period during which the worker is allowed to reacclimatize, and, on moving to an even hotter job, a period must be allowed for further acclimatization.



Above sketch points out the main differences between heat exhaustion and heat stroke.

Dehydration leads to a reduction in the sweat rate and an elevation in pulse rate and body temperature. Workers should be encouraged to replace water loss by providing a supply of cool drinking water in the actual working areas. Drinking little and often—four to seven ounces every 15 to 20 minutes—appears to be the best way of maintaining fluids, and workers should be encouraged to drink in this way.

It is always a possibility that heat casualties will occur when the temperature above 77°F. The factors which contribute, bringing on heat illnesses are clothing (particularly if it does not permit the passage of fluids), high work loads, and rigid routine or discipline which prevents individual workers from pacing themselves with rest breaks and fluid replacement. There is also some evidence that other environmental factors, such as carbon monoxide, may reduce heat tolerance.

The most stressful tasks should be performed during the cooler part of the day (early morning) or at night. Double-shifts and overtime, whenever possible, should be avoided. Rest periods should be extended in accordance with the increased heat load. One way to maintain production during heat spells is to increase the work force temporarily.

At present, there is no mandatory OSHA heat stress standard in force. Studies performed by NIOSH, however, have shown that fatal heat casualties occur if prevention measures are not observed thoroughly during heat spells.

References

1. American Academy of Orthopedic Surgeons (1971). *Emergency Care and Transportation of the Sick and Injured*. George Barnt Co., Inc., Menasha, WI. Consin. Pp. 148-149.
2. Schilling, R.S.F. (1975). *Occupational Health Practice*. Butterworths: London & Boston. Pp. 333-334.

Privileged and Confidential: Attorney-Client Communication and / or Attorney Work Product; Confidential Settlement Communication

Figure 4-1. Heat Exposure vs. Heat Stroke

- Field team members will work in pairs.
- Wear disposable rubber or latex gloves when handling traps, rodent carcasses or traps containing rodents, rodent nests, or rodent nesting materials. Gloves also will be worn when handling soiled clothing. Heavy-duty gloves (Kevlar®-reinforced) will be worn when handling live mammals.
- Spray dead rodents, nests and nesting materials, traps, and gloves with a 10% solution of household bleach. Soak thoroughly. Wait 10-20 minutes before placing the material in a plastic bag and seal. Place the bag inside another plastic bag and seal.
- Wear long-sleeved shirts, long pants, socks, and shoes to prevent the potential transmission of the virus through open cuts. Tyvek® coveralls may be used to provide an additional measure of protection. Clothing should be laundered daily.
- Wear an appropriate respirator during all operations involving the collection, handling, and processing of rodents and rodent nests and nesting materials. The full-face PAPR with HEPA P100 filter cartridges will be appropriate protection for the hantavirus when on-site. For protection from the hantavirus off-site, an PAPR with N-100 cartridges or equivalent half-face respirators will be worn. Masks will be replaced after each break, at each trapping station, or anytime the mask is removed. Additionally, if breathing becomes difficult, the mask will be replaced.
- Bags containing rodents, nests or nesting materials, or traps should be transported in the bed of a pickup truck, if available. If a pickup truck is not available, animals should be transported in the trunk of the vehicle used for transportation to the field site.

4.6.2 Collection of Birds

Birds will be collected using appropriate methods as specified in the SAP (EPA 2008). Some birds may be infected with the avian influenza virus. Although the risk to field personnel is minimal since the virus does not transmit easily to humans, common sense precautions will be used when processing or handling birds (detailed below).

Other potential hazards include bruising or injury from bites from live animals. Protective clothing, gloves, and respirators will be worn at all times during the collection, handling, and processing of birds, if not in Level C PPE (e.g., while performing necropsies off-site). Traps, bags, and other collection vessels will be disinfected.

- Field team members will work in pairs.
- Wear disposable rubber or latex gloves when handling traps, bird carcasses or traps containing birds, bird nests, or bird nesting materials. Gloves also will be worn when handling soiled clothing.
- Spray dead birds, nests and nesting materials, traps, and gloves with a 10% solution of household bleach or a 70% solution of isopropyl alcohol. Soak thoroughly. Wait 10-20 minutes before placing the material in a plastic bag and seal. Place the bag inside another plastic bag and seal.
- Wear an appropriate respirator during all operations involving the collection, handling, and processing of birds and bird nests and nesting materials. The full-face PAPR with HEPA P100 filter cartridges will be appropriate protection for avian influenza when on-site. For protection from avian influenza while working off-site, an N95 respirator with an exhalation valve will be worn. Masks will be replaced after

each break, at each trapping station, or anytime the mask is removed. Additionally, if breathing becomes difficult, the mask will be replaced.

- Bags containing birds, nests or nesting materials, or mist nets should be transported in the bed of a pickup truck, if available. If a pickup truck is not available, animals should be transported in the trunk of the vehicle used for transportation to the field site.

4.6.3 Collection of Fish and Aquatic Invertebrates

Fish and aquatic invertebrates will be collected using appropriate methods as specified in the SAP (EPA 2008).

- Field team members will work in groups of four for fish collection and in pairs for aquatic invertebrate collection.
- While electroshocking for fish, rubber gloves and neoprene chest waders (or neoprene hip waders) will be worn in addition to Level C PPE (Section 4.2).
- Instream woody debris may present a tripping risk and pose a hazard during the collection of invertebrates or fish. Field sampling personnel should exercise caution.
- Soft sediments (mud) may be deep and extremely sticky, and may pose a hazard during the collection of invertebrates or fish. Field sampling personnel should exercise caution.
- It is presently not expected that boats or small watercraft will be required to collect samples; however, if these are required, life jackets or other approved personal flotation devices will be worn at all times, and all Parametrix health and safety requirements pertaining to the use and operation of boats and other small watercraft will apply.

4.6.4 Collection of Sediment

Sediment samples will be collected as specified in the SAP (EPA 2008).

- Field team members will always work in pairs.
- Level C PPE (see Section 4.2) will be worn while sampling. Chest waders (or hip waders) are recommended for in-water sampling.

5. INSPECTION AND DECONTAMINATION PROCEDURES

5.1 INSPECTION OF RESPIRATORS

All respirators will be inspected daily before use. Respirators will be cleaned daily, allowed to dry, and stored in a clean plastic bag. HEPA P100 cartridges will be changed weekly, or more frequently if breathing becomes difficult. All cartridges will be disposed of as potentially asbestos containing waste.

5.2 DECONTAMINATION PROCEDURES

Before reentering the vehicle from the mine site, workers wearing Level C PPE will spray their outer garment with hair spray to reduce airborne fibers and carefully remove the outer Tyvek® suit (i.e., turning it inside out keeping the “dirty” side to the inside). The outer gloves will then be removed in the same fashion (inside out), and the PPE removed at that location shall be left onsite in disposal containers to avoid bringing contaminants into the vehicle.

While wearing Level C PPE with one pair of gloves and one Tyvek® suit, they will have the vehicle decontaminated externally with water on-site by the Mill Pond at the vehicle decontamination pad. Once the vehicle has been washed down, it will be driven on the paved road down to the site entrance/exit. Then it will be driven to the flyway area across Highway 37 from the site to conduct personnel decontamination. Once at the flyway area, the vehicle will be rinsed with clean water on the exterior. This water will be captured for return to the mine site.

Workers will exit the vehicle and enter the personnel decontamination trailer. They will remove the booties or boots, roll down their Tyvek® suit inside out, remove their respirator, remove their inner gloves and wash their face and hands (or shower). It is recommended that personnel shower and wash their hair. Then workers can change into clean street clothes to leave the site. All used PPE will be properly containerized for disposal.

If leather gloves or rubber gloves are used on-site, they must remain on-site. All clothes under Level C PPE should be dedicated to the project including gloves, hats, and long-sleeved shirts.

6. EMERGENCY ACTION PLAN

6.1 EMERGENCY ROUTES

The nearest hospital with emergency services to the Libby Asbestos Superfund Site is St. John's Lutheran Hospital (see Figure 6-1 for a map showing the route to the hospital).

Facility: St. John's Lutheran Hospital
Address: 350 Louisiana Avenue
Libby, Montana 59923
Phone: (406) 293-0100

6.2 RESCUE AND MEDICAL DUTIES

In the event of an emergency, the Site Manager and/or Field Team Leader is responsible for establishing and coordinating procedures to evacuate all on-site personnel, including non-Parametrix personnel.

- Field team members will provide first aid and/or CPR, as needed, within the limits of their training.

The following equipment will be available on-site:

- First-aid kit
- Mobile (or satellite) telephone

6.3 REPORTING EMERGENCIES

Emergencies, including fires, will be reported to the local authorities by the Site Health and Safety Officer, the Field Team Leader, or the Site Manager. A listing of emergency contact numbers is provided in Table 6-1.

6.4 REPORTING ACCIDENTS

Accidents and incidents, including near misses and minor injuries, involving Parametrix employees will be investigated. The Project Manager or designee will take the lead in conducting the investigation. The investigation will be documented using both a Parametrix Supervisor's Report of an Accident form and a Parametrix Employee's Report of an Accident form (Appendix A). Both accident forms will be forwarded to the Parametrix Health and Safety Officer (H&S Officer) and the Human Resources Department in Bellevue, WA. A copy of the report shall be maintained in the project file, and a copy shall be provided to the Remedium Group, Inc. representative, the EPA representative, and the lead H&S Officer.

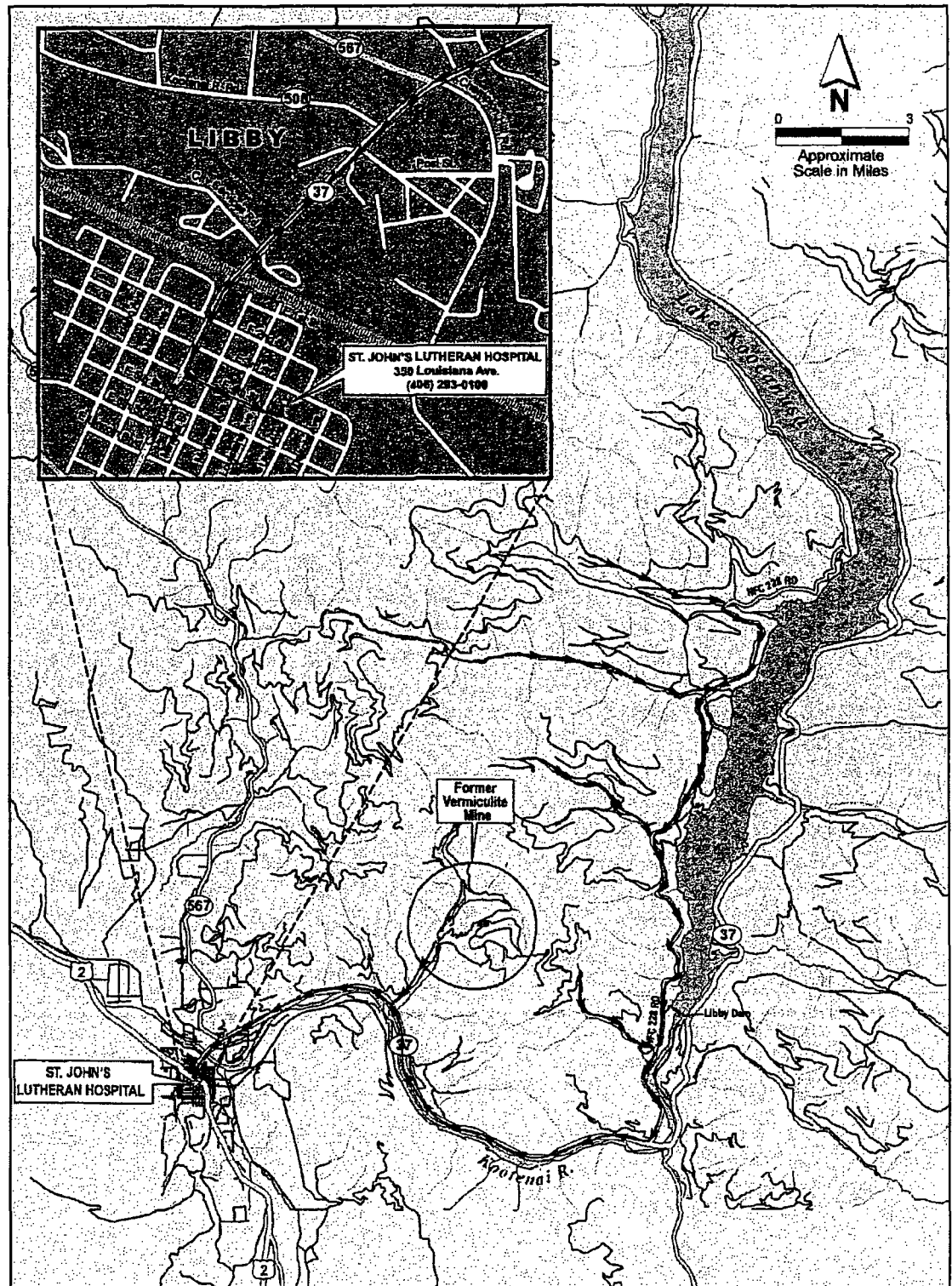


Figure 6-1. Map to Hospital

Table 6-1. List of Emergency Contacts

	Telephone	Name/Contact
Site Telephone	Not applicable	
Ambulance	911	
Hospitals	(406) 293-0100	St. John's Lutheran Hospital
Rocky Mountain Poison & Drug Center	1-800-222-1222	
Police Department	911	
Fire Department	911	
Emergency Services	911	
National Emergency Response Center	1-800-424-8802	
Sr. Project Manager	(541) 791-1667	Bill Stubblefield
Project Manager/Field Study Director	(425) 458-6205	Sue Robinson
Client Contact	(901) 820-2023 (office) (901) 277-9031 (mobile)	Robert Marriam
Corporate Health & Safety Officer	(425) 452-8655 (253) 863-5128	Sheila McConnell or Mike Warfel

7. MISCELLANEOUS REQUIREMENTS

Access to the site is controlled by U.S. EPA. Field team members must contact Courtney Zamora (406-293-8595, ext. 241) at the CDM offices and check in on a daily basis. At their discretion, CDM personnel may accompany field team members during field sampling efforts.

Because of the type of field sampling to be performed at this site, a number of typical HASP features are not required. These are briefly summarized below:

- No medical surveillance is required at this site. If individuals are trained in accordance with Section 3 of this HASP, those individuals will have current medical clearance to undertake hazardous waste activities and to wear respiratory protection per 29 CFR 1910.120(f).
- No confined space entry is required at this site.
- No dust or air monitoring is required, since all field personnel will be wearing appropriate PPE (see Section 4.2) at all times while at OU3.

8. REFERENCES

EPA (U.S. Environmental Protection Agency). 2008. Phase II Sampling and Analysis Plan for Operable Unit (OU3), Libby Asbestos Superfund Site, Part C: Ecological Data. Prepared by EPA with Technical Assistance from Syracuse Research Corporation and NewFields Boulder, LLC, Denver, Colorado.

APPENDIX A

Forms

SIGNED ACKNOWLEDGMENT FORM

As a component of the Health and Safety Plan (HASP) designed to ensure personnel safety during project activities, you are required to read and understand the HASP before commencing any work. When you have fulfilled this requirement, please sign and date this personal acknowledgment form.

I have been provided with a copy of the HASP for this field project and have become familiar with it. I understand the Emergency response actions, contact numbers and locations of emergency facilities outlined in Section B6.

I will complete my tasks in a manner conforming to the HASP, Parametrix procedures, and specific additional guidance provided during pre-job briefings, and will inform the Health and Safety Representative or project manager of any conditions affecting site safety.

[illegible]

Employee's Report of an Accident

(To be filled out for all occupational injuries or illnesses)

PERSONAL INFORMATION

Name:	Supervisor:
Date of Birth:	Employment Category:
Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Regular, full time
Job Position/Title:	<input type="checkbox"/> Regular, part-time
Social Security Number:	<input type="checkbox"/> Temporary

ACCIDENT-RELATED INFORMATION

Date of Injury:	Time of Injury:	<input type="checkbox"/> a.m. <input type="checkbox"/> p.m.
Did this accident occur on employer's premises? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Specific location of accident:		
Task being performed when accident occurred:		
Describe the injury or illness in detail and indicate the part of body affected:		
Is this: <input type="checkbox"/> an original injury <input type="checkbox"/> or a re-injury?		
What could have been done to avoid this accident?		
EMPLOYEE SIGNATURE:		DATE:

(Please print this form, sign, and route to Human Resources as soon as possible.)

Claim No.:

Supervisor's Report of an Accident

(To be filled out for all occupational injuries or illnesses)

TO BE COMPLETED BY SUPERVISOR

Supervisor:	Injured Employee:
Date of Injury:	Time of Injury: <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.
Injury Reported to Supervisor:	
Exact Date:	Exact Time: <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.
Who Reported the Injury:	
Names of Witnesses:	

ACCIDENT-RELATED INFORMATION

Specific location of accident:	
Describe the accident:	
Causes of injury:	
Describe the injury or illness in detail and indicate the part of body affected:	
Things that could have been done to avoid this accident:	
SUPERVISOR SIGNATURE:	DATE:

(Please print this form, sign, and route to Human Resources as soon as possible.)

Claim No.:	
------------	--

TARGET SHEET
EPA REGION VIII
SUPERFUND DOCUMENT MANAGEMENT SYSTEM

DOCUMENT NUMBER: 1085863

SITE NAME: LIBBY ASBESTOS

DOCUMENT DATE: 08-28-2008

DOCUMENT NOT SCANNED

Due to one of the following reasons:

- ☐ PHOTOGRAPHS
- ☐ 3-DIMENSIONAL
- ☐ OVERSIZED
- ☐ AUDIO/VISUAL
- ☐ PERMANENTLY BOUND DOCUMENTS
- ☐ POOR LEGIBILITY
- ☒ OTHER
- ☐ NOT AVAILABLE
- ☐ TYPES OF DOCUMENTS NOT TO BE SCANNED
(Data Packages, Data Validation, Sampling Data, CBI, Chain of Custody)

DOCUMENT DESCRIPTION:

CD: Parametrix August 2008 598-6068-001 (05/02) Draft Health and
Safety Plan for Sampling and Analysis of Libby Asbestos Superfund Site
Operable Unit 3 (OU3) Revision No. 1